Commonwealth of Virginia

Data Standards Initiative

April 2009

What are we trying to achieve with Data Standards?

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- **Improve data consistency**
  - Agreement on definition and use of data

- **Reduce cost and improve efficiency of data exchange**
  - Create shared data exchange methods that can be build once and reused often

- **Improve communication and understanding of enterprise data assets**
  - Capture and manage information to promote understanding and reuse
    - what data we collect (dictionary)?
    - why we collect it (business reasons)?
    - who do we share it with (data exchanges)?

Data Inconsistency Example

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- Answering business questions where the data crosses agency and application boundaries is challenging.

For example:

- ***How much did the Commonwealth pay IBM, in total, last year?***
  - CARS has payment data but vendor name is agency controlled and inconsistent

- ***How many contracts did the Commonwealth execute with IBM (or any vendor) last year? How much money was paid out by contract?***
  - Our procurement system (eVA) has some contract data but not all
  - Our financial system (CARS) has the payment data but does not tie back to the contract data in the procurement system (eVA)

Defining and implementing vendor data standards will resolve this business challenge.

Definitions

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- **What is a Data Standard?**
  - A data standard is a common (enterprise) definition, valid data type and size for a piece of data.
    - Some data are defined by a distinct list of valid values (e.g. gender code, state code)
    - Some data are defined as an Identifier – critical to defining uniqueness (e.g. employee identifier)

- **What is a Data Exchange Standard**
  - A data exchange standard is a common method used for exchanging data with others.
    - Some exchange formats are required by other parties (e.g. American Association of Motor Vehicle Administrators – AAMVA)
    - Some exchange formats are within our control (e.g. agency to agency, agency to local)
    - Critical to define the authoritative system of record.
    - Critical to define the agency who can create, update, read and delete the data as it moves across the enterprise.

- **What are National and Industry Data Standards?**
  - Data and data exchange standards defined by national organizations and industry consortiums to improve the ability to share data.
  - Provide public and private organizations with a common data definition, data exchange schema, and solutions to leverage.

Commonwealth Direction

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- **Define and adopt data standards**
  - For the data we share – enterprise data
- **Develop standard data exchanges**
  - Create XML schemas and web services to exchange our enterprise data
- **Identify and learn about national and industry standards**
  - Encourage agency involvement in the development of national and industry standards
  - Assist agency resources in understanding and proposing the adoption of standards
  - Educate the broader Commonwealth community on adopted standards
- **Create an infrastructure to manage the data standards and exchanges**
  - Catalog of standards adopted and under development
  - Data Dictionary providing detailed information about the data standards
  - Web Services registry for managing standard data exchanges

Future Implementation of Standards

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- All ***enterprise*** data will be standardized.
- New projects will be tasked with defining and implementing data standards and data exchange standards.
- New database development must design to the data standard.
- New package solutions will not be required to customize the database storage. These solutions will be required to carry the Commonwealth standard identifier or maintain cross walk to the standard identifier. Package solutions must adhere to data standard definitions and valid values for enterprise data.
- For existing and legacy solutions, agencies will evaluate to determine when they will migrate to the data and data exchange standards.

VEAP will work with VITA PMD to incorporate data management activities into the existing Project Initiation and Architecture Review processes.

All major projects must plan time to develop and/or implement data standards.

Projects Supporting Data Standards

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Project	Status	VEAP Partners	Data
Business One Stop Phase II	Active Defining Data Requirements	SCC (State Corporation Commission) DBA (Business Assistance) Tax VEC (VA Employment Commission) DGS (General Services) DMBE (Minority Business)	Business data Business Certification data
VDOT/Enterprise Financial System	Active DGS conducting data model reviews	VDOT (Transportation) DOA (Accounts) DGS (General Services) DHRM (Human Resources) DPB (Planning & Budget) TRS (Treasury)	Chart of Accounts Financial data Vendor and Purchase Order Employee and Time/Attendance Budget data
DMV – CSI System Redesign	Active 3/20 initial meeting	DMV (Motor Vehicles) Tax***** DSS***** (Social Services)	Citizen data Other categories TBD in April 2009 as project begins
Performance Budgeting System	Resources to be assigned	DPB	Budget data

*VEAP will be requesting Data Owner and Data Steward involvement from these agencies

Where are we today?

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- **Supplier Data Standard and Data Exchange – DGS, DOA, VITA SCM**
  - Draft of data standard under review – attribute level
  - XML Schema drafted
  - Anticipate completing reviews by June 2009
  - Present standard for adoption in July 2009

- **Purchase Order Data Standard – DGS, DOA, VITA SCM**
  - Draft of data standard started – attribute level
  - Anticipate review during summer 2009
  - Present standard for adoption in September 2009

- **Employee and Timecard Data Standard – VEAP, DHRM, DOA (payroll)**
  - Employee Profile, Position, Timecard – started but needs more work
  - 2 projects to help define the standard – HR shared service and VDOT-DOA FM Project

- **Chart of Account Data Standard – DOA, DPB and COA Work Group**
  - Draft data standard – entity level
  - Intend to finish data standard at attribute level during FM Project Analysis and Design Phase

Example- developing a data standard

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Input

Enterprise Data Requirements

Industry Data Standards

Enterprise Data:
Citizen
- First Name
- Middle Name
- Last Name
- Name Suffix
- Race
- Gender
- Birth Date

HR-XML: HR Industry – Standard XML Schemas
Person Name and Person Descriptor Entities
- PersonName/GivenName
- PersonName/MiddleName
- PersonName/FamilyName
- PersonName/Affix/Generation
- PersonDescriptors/ DemographicDescriptors/Race
- PersonDescriptors/ BiologicalDescriptors/GenderCode
- PersonDescriptors/ BiologicalDescriptors/DateOfBirth

Process

Data Standardization Process

Activities:
Validate Data Requirements
Collect Data Attribute Metadata
- Enterprise Definitions, Valid Values
- Data Ownership (Create, Read, Update, Delete)

Evaluate Existing Standards
Review proposed standard and incorporate feedback
Adopt the standard

Output

Data Standards

Data Standards Catalog:
Commonwealth Data Standards
Standard Data Exchanges built for enterprise applications (includes XML schema and web services)

Standard Data Exchanges

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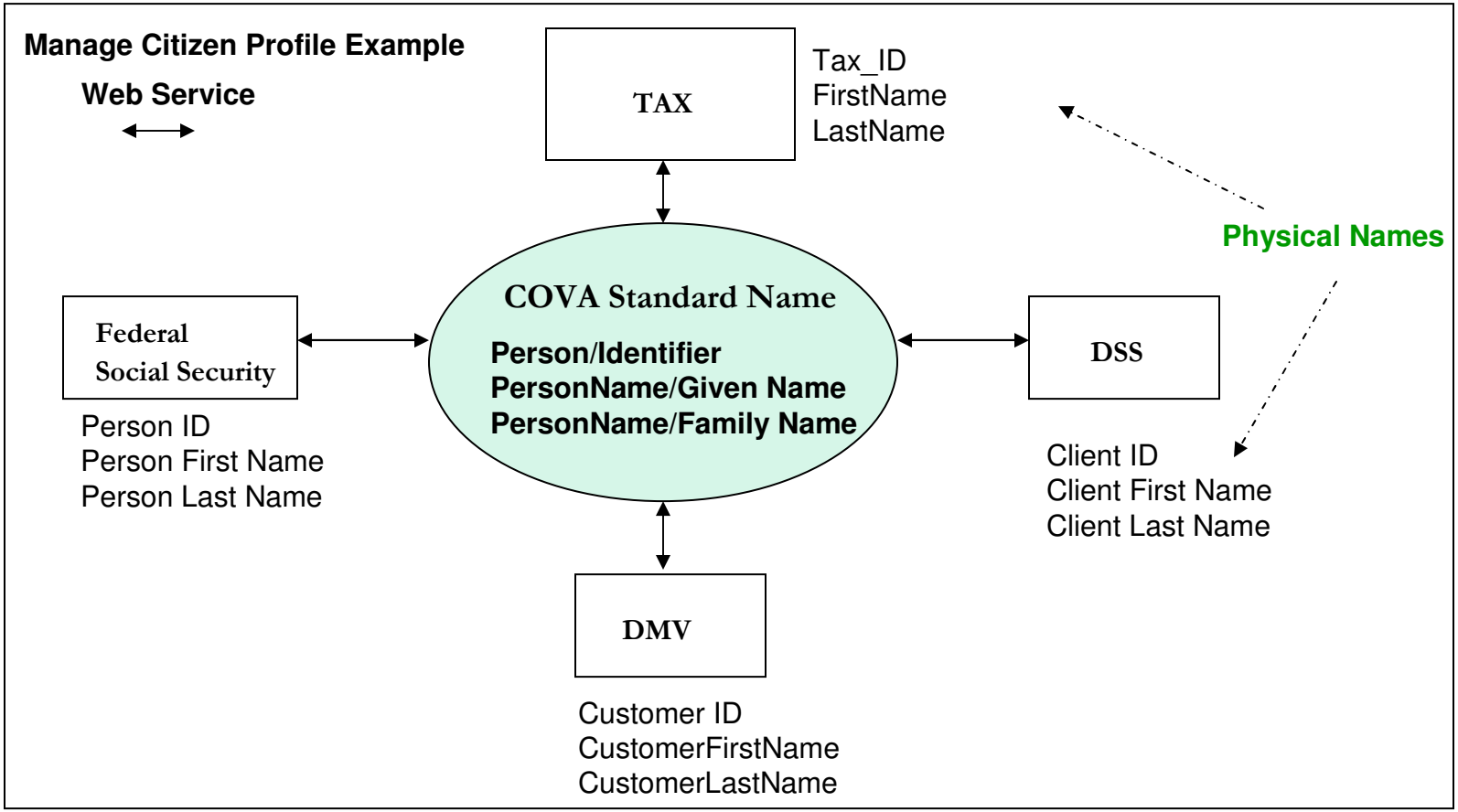

Data standards must be grounded on business drivers.
Is it our vision to have a 360 view of the citizen?

If yes, we must define the enterprise data and exchange process to manage it.

Data Entity and Attribute Levels - Example

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Data Entity Level

A data entity is some unit of data that can be classified and has stated relationships to other data entities. e.g. Employee and Position are data entities and they have a relationship.

Employee
An employee is a person who performs a service or services for a state agency, who has an expectation of receiving compensation, and who works under the control of the agency as to what activities are performed and how they are performed.

Information Collected

- Standard Definition
- Data Owner
- Relationships with other Data Entities

Data Attribute Level

A data attribute is the defined as a characteristic or property of the data entity.

Employee Name
Employee Agency Number
Employee Race Code
Employee Birth Date
Employee State Begin Date

Information Collected

- Definition
- Data Type and Size
- Valid Values
- Data Owner
- Authoritative Source (System of Record)
- Authoritative Reference (Justification for data Collection)
- CRUD – create, read, update, delete controls

Enterprise Data Management – Other Activities

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- **Opportunity to develop a Commonwealth Data Strategy**
  - Vision, Goals, Objectives and Strategies for managing data
  - IT Investment Management Customer Council members identified volunteers to participate in a a cross-functional work group to develop the data strategy
  - Meeting weekly and reporting monthly to the ITIM Customer Council

- **Opportunity for bringing Statewide Education and Workforce Data Together**
  - ARRA funds for the Commonwealth to collaborate on bringing education and workforce data together
  - Agencies partnering on preparing this grant - DOE, SCHEV, VCCS and VEC

- **SB936 - provide a searchable database**
  - DGS, VITA and DOA providing data to the APA for inclusion on Data Point